A Naval Safety Center Publication

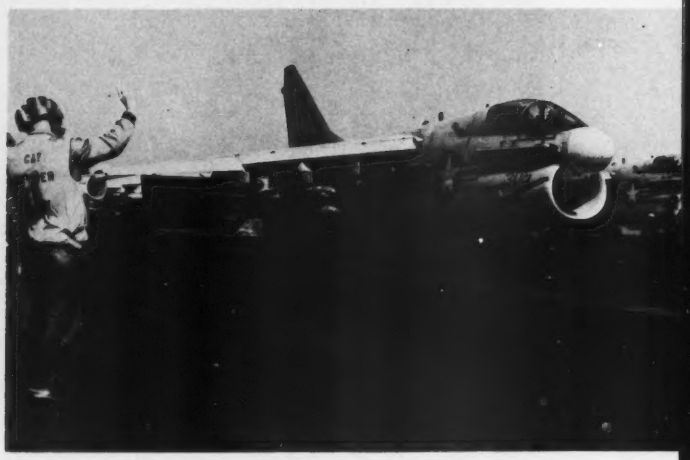
approach

JANUARY 1974 THE NAVAL AVIATION SAFETY REVIEW

On 28 May 1973, VA-113 *Stingers* completed 20,000 hours of accident-free flight operations. This noteworthy mark was achieved over a period of 44 months, with more than half the hours flown at sea, including 6000 carrier landings and extensive combat operations, our most hostile naval aviation environments.

Such professional achievement commands attention. Thus, it was that Commander, Naval Air Force, Pacific Fleet, directed Commanding Officer, VA-113, to submit a resume of the methods employed by the squadron in achieving accident-free operations. The result is a thoughtful treatise which presents solid management ideas and principles of wide applicability.

ONE APPROACH TO SAFETY



THERE were five commanding officers and six aviation safety officers during this period. Consequently, there were many varying approaches to aviation safety and numerous squadron policies in effect at various points during these 44 months.

An effort was made, however, to determine underlying long-term factors which prevailed, regardless of personalities or the operating arena. There was a steady infusion of new ideas which, in itself, was perhaps a strong and consistent influence.

For the purpose of analysis, the review of the command aviation safety program was divided into three areas:

- Before the fact.
- During a potential accident.
- After the fact.

Before the Fact

- Section leader qualification is not perfunctory. It must be earned through demonstrated performance and acceptance of commensurate responsibility.

- Briefing and practicing emergencies routinely reduces much of the mental stress during an actual occurrence and reduces the likelihood of the pilot aggravating a minor emergency. It is considerably easier to fly a bingo profile to a divert field with the low fuel light on if one has done it recently as part of his routine training. Other areas in which this concept has been applied are the cockpit emergency trainer, operational flight trainer, night carrier landing trainer, inflight precautionary approaches, and simulated NORDOs.

- A program of *methodically* training PMIPs (postmaintenance inspection pilots) and of conducting postmaintenance inspection flights has contributed to improved detection of aircraft discrepancies and a lower rate of incidents resulting from equipment malfunctions. The control and direction of this program is the responsibility of the quality assurance officer, and all-PMIP meetings are held often to discuss operating procedures and problems.

- Rather than avoiding the potentially hazardous flight regime of DCM (defensive combat maneuvering), a strong training program was conducted to reduce the possibility of inadvertent departure from controlled flight and inability to recover – a cause of numerous recent losses.

Beginning with section aerobatics, which also builds confidence to prevent overreaction and vertigo during IFR and night section operations, the syllabus was extended to include a deployment to Fightertown for instruction by experts in high-performance maneuvering. The pilots' real abilities and confidences (vice readyroom bravado) in operating in all corners of the flight envelope were developed, and mental preparedness for an *in extremis* situation was increased.

- Pilot aircraft inspections, assisted by plane captains and troubleshooters, have been reimplemented on a periodic schedule and are oriented to accomplish specific goals, i.e., safety of flight prior to the first day "on the line" and detection of corrosion and minor airframe or equipment discrepancies prior to an inport maintenance period. It is during these contacts and through "rap

sessions" during daily preflight inspections that pilots convey to maintenance personnel the importance of professional workmanship to the mission and to aviation safety.

• Plane captain training and emphasis on the criticality of the plane captain's functions are extremely important. The line division should not be a cache for unproductive or troublesome personnel. Initial assignment and subsequent qualification is done with care and concern for aviation safety.

During the last 2 years, at least five aircraft have been saved by discovering FOD in the intakes. Another was saved by the discovery of a loose bolt in the engine dome, and one plane captain discovered a cracked nose strut. The selection of Plane Captain of the Month is given high visibility and recognition by all hands.

• "Lost Horse Theory." The farmer who found one of his horses missing, rather than beginning a random search, asked himself, "If I were a horse, where would I go?" Predetermination of the next most likely accident or accidents and positive action to ward them off have been effective. For example, in returning to shore-based operations in CONUS, cross-country flights and night bombing have been designated as having extra hazardous potential and are emphasized more in the training syllabus.

The above concept led to an extension program which has been implemented on a trial basis at the direction of Commander, Attack Carrier Air Wing TWO.

Designated "Stinger Systematic Safety," it is an application of a theory presented by LCDR R. A. Hess in "System Safety and the Decision Maker," APPROACH, June 1973. Its purpose is to identify adverse potential prior to a flight to permit the commanding officer to make a decision as to the necessity and advisability of a given mission. Three independent areas, the pilot, the aircraft, and the environment, are considered separately and given weighted values of adverse potential. These are then combined to result in a quantified estimate for the safe return of a specific sortie.

• The quality of the maintenance of aircraft is recognized as crucial to aviation safety – so much so in VA-113 that a previous commanding officer directed that the CNO Safety Award presented to the squadron in 1971 be hung in the maintenance office.

An active quality assurance program has been substantiated as invaluable. Through this tool, a continuous assessment of the quality of the maintenance effort can be obtained. For example, a program to provide an aircraft out of calendar inspection in full RFI condition, rather than to accept a common approach of "fly it to determine existing discrepancies," has resulted in a measurable increase in aircraft returned to service after one unexciting test flight rather than after several deck aborts or a hasty respot to land an inflight emergency.

Corrosion control has been recognized as important not only to long range preservation of expensive assets but also as a contributing factor, when not effective, to numerous mishaps attributed in AARs to material failure. Command attention is given to the assignment and qualification of members of the corrosion control team.

Additionally, initiative on the part of responsible maintenance department supervisors to augment or improve upon existing maintenance requirements has had notable success. A case in point is a recent directive from higher authority to introduce a fuselage pylon corrosion inspection on a periodic basis. This inspection had long before been instituted by cognizant squadron personnel who recognized the need above and beyond existing directives. Other examples are extra servicing of air-conditioning turbines above that required by maintenance directives and additional wire checks of weapons release systems resulting in the claim by the squadron ordnance branch of never suffering a "no drop" during a bombing derby.

In promoting preparedness and awareness within the squadron, a recent request to the Aviation Safety School at Monterey for a safety survey was honored. This was a valuable means of reorganizing thinking to shorebased operations after a WestPac deployment. Interest was

focused on identifying potential hazards associated with a new operating environment, and corrective action was initiated where necessary. For example, it was noted that experienced plane captains, who were considered trained and qualified aboard ship, were untrained in aircraft taxi signals and in refueling ashore.

During a Potential Accident

This regime is not limited to the events after the engine chugs or the fire warning light is illuminated, but could begin at any point during maintenance action or subsequent preparations for flight. An aviation program called "Break the Chain" has been implemented in the squadron to first, publicize the fact that *all* personnel are involved in accident prevention and second, to interrupt, at some point, the *sequence* of events usually identified as leading up to a mishap. Very few accidents result from one distinct event or failure. The concept that anyone, from technician to commanding officer, can break the chain of events and thereby prevent an accident stimulates full squadron participation and constant alertness. Specific employment of this program is described below:

- The quality assurance division is entrusted to identify trends which could flag impending failure. An accident may begin several weeks prior to the flaming wreckage if it is the result of a deteriorating oil seal or worn bearing. Repeat gripes are considered to be a sign of a developing chain, and the sequence is interrupted after three consecutive occurrences of any one discrepancy, regardless of how small.

One example of the operation of the procedure is a trend noted in the automatic flight control system of an aircraft which resulted in an investigation by an engineering team with representatives from NASC, CNAP, NATC, NARF, and LTV. Technical assistance was provided by the squadron as well as a test plan and a test pilot. A second example was when repeat discrepancies on three aircraft engines were labelled as a trend, perhaps because of maintenance error or of impending material failure. The action taken in this case was to make use of the services of an Allison Company field representative during a complete review of the flight and maintenance action history of the engines in question. The utilization of expert assistance when problems arise is strongly endorsed.

- The vital position which plane captains hold in the safe operation of aircraft through their daily and preflight inspections has already been described. It can only be reiterated that their motivated and dedicated involvement is invaluable and has in fact broken the chain in numerous documented instances.

- The professionalism of the squadron pilots has been a significant factor in preventing numerous incidents from degenerating into disasters. At least five aircraft were saved in the last 2 years through fine airmanship. Compressor stalls resulting in engine shutdown and relight, experienced on several occasions, and oil starvation with subsequent successful emergency landing on a cross-country demonstrated these pilot skills. Additionally, emergency landings because of a malfunctioning fuel control and in another case because of a disintegrating compressor turbine were executed routinely as a result of squadron emphasis on preparing for the unexpected.

The command, as might be assumed when operating high-performance, single-engine aircraft in the particularly rigorous environment of carrier operations, was not without incidents. The ability of the pilots to

break the chain leading to severe consequences was, however, a major factor in maintaining a continuous record of accident-free flying.

After the Fact

In addition to submitting necessary incident reports, URs, and DIRs, several further procedures have been found to be beneficial in extracting the most from situations as they occur.

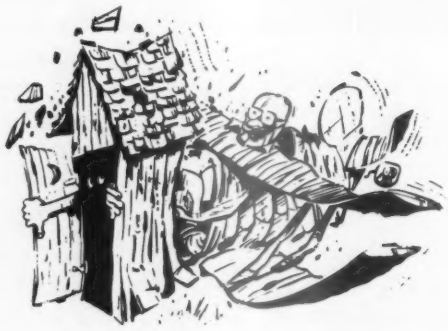
- A pilot experiencing a problem, whether attributed to mechanical failure, weather, controlling agency, etc., is detailed to research the cause, determine the corrective or preventative action, and present a brief at the next pilot ground training session. It has been noted that considerably more interest is given to training of this type when direct applicability is obvious and also when the drama of the situation is still fresh. This method has had proven results when two subsequent similar failures occurred, one due to a fuel transfer system failure, and one due to an inflight compressor stall. Each was handled routinely. It may be interesting to note that almost exact parallels of each case have occurred recently within the A-7 community, both resulting in loss of the aircraft.

- Recognition for exceptional individual performance in professional workmanship or specific accident prevention cannot be overemphasized. The lasting impression on the man concerned and the need for grasping each opportunity to publicize aviation safety is self-evident. Methods currently in effect to accomplish this purpose are the "Stinger of the Month" and "Plane Captain of the Month" programs. The nominations for these awards is quite often based on a maintenance "save" in a potentially hazardous situation.

The achievement of a continuous record of safe flying for almost 4 years in an atmosphere rife with potential disaster brings about the question of luck versus sound operating practices. Although the element of propitious circumstance cannot be ignored, it is well-known that professionalism is a very great contributor to luck.

It has been the *modus operandi* of the Stingers, past and present, to aggressively prosecute the assigned mission above and beyond that required. The successful participation in the Admiral McClusky Award and CNO Safety Award and numerous COMLATWINGSPAC bombing derbies speaks for their vigor. The command is neither overprotective, nor does it "hold its breath" during flight operations. In being the first operational A-7 squadron to perform Mode I automatic carrier landings and to continue to work out the numerous bugs in the newly introduced A-7 ship/aircraft system during a combat deployment, the attitude of enthusiasm for aviation safety has continued to be fostered.

There is no golden key to success in aviation safety hidden in the paragraphs presented above. It appears to be more a matter, as always, of individual pride in workmanship, energetic prosecution of one's assigned duties, and imaginative and responsible supervision. These platitudes are combined in the one necessary ingredient for successful accomplishment of any goal in naval aviation – professionalism. Every valid definition of professional merit leads to the conclusion that the best are the safest and the safest are the best. ◄



Out of the Envelope

It is obvious that this accident was not the final consequence of a single error, but rather, the ***cumulative result of several minor deviations*** from normal operating procedures which triggered a sequence of events with disastrous results.

from Mishap Board's summary

QUALITY UNCONTROLLED

MOST of us have made judgment decisions on margins of safety in order to accomplish a mission. Hopefully, as supervisors, we have evaluated the risks and made the decision in the best overall interests of the Navy. How far down the chain of command are *you* willing to let these decisions be made? One way to force the decision making down to the nonsupervisor level is to "put the pressure on." For example:

High tempo flight operations in a squadron placed unusual pressures on maintenance for increased availability of aircraft. Aircraft No. 12345 came in and was downed for 4 hours with an avionics problem (1830-2230 local). The parachute also required repacking, and PO3 Eager Rigger pulled said chute and headed for the loft with his assistant, Barely Qualed. The book says three people are required to pack a chute – two packers and one inspector. Unfortunately, the intermediate maintenance chief – the only available chute inspector – had secured for the evening. (The noose begins to tighten.)

Eager Rigger and Barely Qualed have packed hundreds of chutes, and this is no time, they decide, to let the squadron down. A quick repack, and the chute is back in the plane and ready for launch. (Everybody cheer for the great effort.)

Two months later, PRC Ketchem had occasion to examine Rigger and Qualed's handiwork. He found:

- The parachute actuator locking screw missing.
- No tamper dots on connector links or parachute actuator.
- Connector links tied down with slip knots vice bowline knots.
- Extractor sleeve not snapped.
- Extractor lanyard sleeve not stowed.
- Incorrect snaps installed on extractor sleeve modification: dura dots installed vice pull-the-dot snaps.
- Manual ripcord release lanyard not tacked to container.
- Spreader gun cartridge information not recorded on history card.
- No QA inspection stamp.

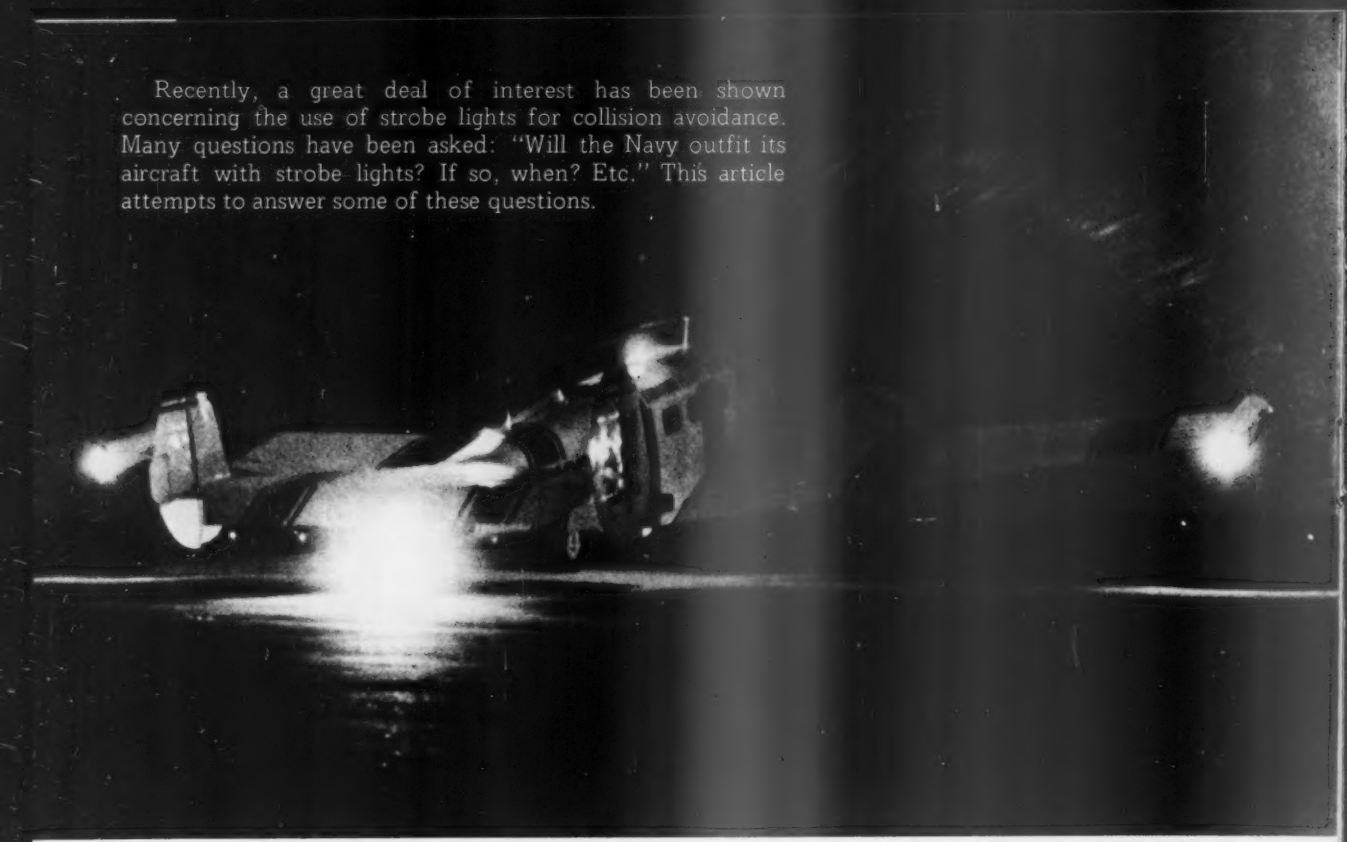
Incidentally, that little missing screw could have busted someone's you-know-what on a low-level ejection.

Probably every squadron has its own hard-working, "can-do" oriented, almost (but not quite) qualified personnel who, when forced, will make executive decisions on safety matters.

When the supervisor is told by his men that they will somehow accomplish the impossible, it is his responsibility to find out *how* they will do it. When the pressure is on, the supervisor had better be sharp or the whole ball game (or aircraft) may be lost.

The above story is true. Only the names have been changed to protect the guilty . . . . .

Recently, a great deal of interest has been shown concerning the use of strobe lights for collision avoidance. Many questions have been asked: "Will the Navy outfit its aircraft with strobe lights? If so, when? Etc." This article attempts to answer some of these questions.



By CDR H. E. Lotze, Jr.
Naval Safety Center

Strobe Light

Q: WHAT'S the background on aviation night lighting?

A: Since the time aviation communities started to launch into the black of night, we have attempted to provide improved ground and airborne lighting systems for navigation, land/takeoff phases, and collision avoidance. A few may recall the "good ole days" when the only aircraft external lights were the red/green/white wing and tail lights. The lights seemed even better when we could select double intensity and could even make them flash.

Even fewer of the Old Fudds can recall from first hand experience the flashing airways beacons that guided the intrepid, silk-scarfed birdman through the plains and mountain passes, following the old A-N radio range. During this era, the CAA (Civil Aeronautics Administration), precursor of our present FAA, laid out regulations concerning size, color, intensity, and position of aircraft exterior lighting.

In the late 1950s, the Navy really started improving its "see and be seen" image by installing 200 candela (candlepower) incandescent rotating "Grimes" lights. In recent years, with the ever-increasing aircraft speeds and the proliferation of commercial and private aircraft operating in U. S. airspace, it has become obvious that we needed technological advances to lessen collision hazards.

Q: What are some of the new methods being developed to avoid collisions?

A: Some proposals include aircraft altitude surveillance devices such as our present AIMS, active air-to-air range and aspect warning, and active/passive ranging systems. Probably the most cost-effective device that has had the most universal acceptance by all sectors of the aviation community is the Xenon, high-intensity strobe light.

Q: What is a strobe system?

A: In non-technical terms, the strobe system is made

up of a glass tube filled with Xenon gas, a power source, a capacitor/timer, and switchology to control the system. The capacitor/timer discharges onto the glass tube causing the Xenon gas to flow at a very high intensity for an extremely short period of time. It is this very short, very bright burst of light that catches the observer's attention.

Q: How does the strobe compare with the present "Grimes" light?

A: The question, of course, arises as to how much brighter (better) is the strobe than the present incandescent anticollision light. Fig. 1 shows nominal comparative parameters for the two lights.

	Incandescent	Xenon
Effective Intensity:	100-300 candela	Red 100-400 candela White 800-4000 candela
Flash rate:	40-120 per min.	40-120 per min. (80 average)
Flash duration:	.8 second	.0002 second *
Colors:	Red lens	Blue-white or red filters

* The eye tends to integrate this which makes the light duration seem longer.

Fig. 1

civilian aircraft community – especially the private owner.

Q: Are there any extra health hazards associated with strobe lights?

A: There are no physiological factors of major concern. There may, however, be some distraction due to backscatter when flying in or near visible moisture just as exists with the present anticollision lights.

With flash rates of approximately one per second presently in use, flicker vertigo is not anticipated. Flash rates of from 6 to 20 per second would be required to produce epileptic seizure phenomena.

Also, the FAA has published a precautionary bulletin recommending avoidance of viewing strobes directly when in close proximity to the light source or use of binoculars or other magnification devices as eye damage may result.

SitRep

Q: Are civilian aircraft using strobes?

A: Most emphatically, yes. At last count, approximately 40,000 of the 135,000 civil aircraft registered with FAA have strobe lights of various types, colors, intensities, and flash rates to enhance their conspicuity. They are being installed at a rapid rate. Also, the commercial carriers have put strobes on their wide body jets, and most other jets in service are being retrofitted.

Q: Is the FAA going to require strobes on all civil aircraft?

A: Not at this time. The FAA has drafted a test plan proposal for strobe light evaluation that would cost an estimated $75,000 using airline/military aircraft and pilots. Their present position is, however, that they cannot make new rules concerning strobes because the specific requirements have not been well enough defined to set requirements that would be acceptable to the

Q: What are other military organizations doing about strobes?

A: The U. S. Army has the most viable program at this time. They have conducted extensive laboratory and field experiments which indicate that Xenon lights have a definite beneficial effect on ability to "see" aircraft early, especially when viewed at an angle to the axis of the eye (peripheral vision). It is understood that the Army has requested contractor bids for 3000 piggyback, red/white over and under strobes (Fig. 2) for installation on their helicopter and fixed-wing aircraft. It is envisioned that these strobes will be installed in the present anticollision light receptacle atop and beneath each craft. They would be omnidirectional and have a nominal 3500 effective candela (white) and 200 effective candela (red) selectable lights that flash approximately 60 times per minute, 180 degrees out of phase (the effective flash rate would be about 120 per minute). Estimated cost is approximately $1000 per aircraft.

The Air Force is in the process of evaluating prototype installations on selected T-37, T-38, T-39,

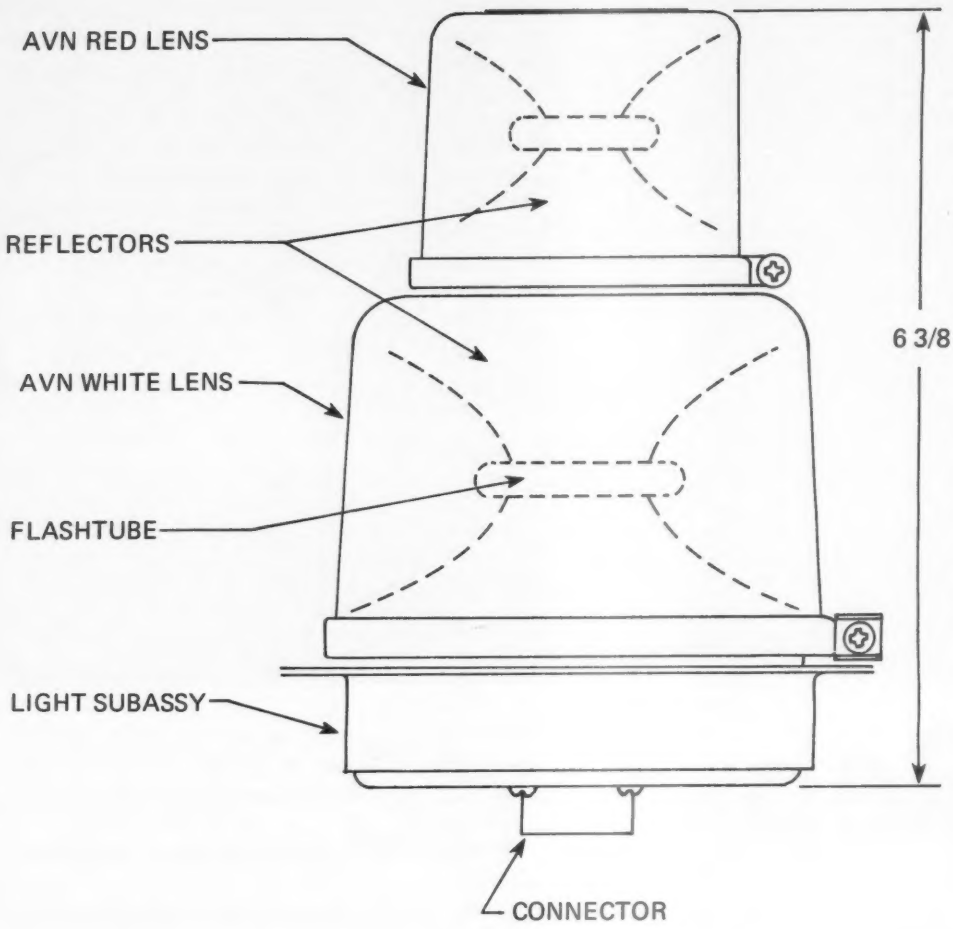


Fig. 2

One lamp design that combines both day (clear) and night (red) capability in a single housing.

C-141, FB-111, B-52, and KC-135 aircraft. Also, it is understood that the Air Force is considering the Army approach for their helicopter fleet.

The U. S. Coast Guard has strobes on a few of their transport aircraft only.

Q: Well, how about the Navy/Marine Corps?

A: There is little doubt that type commanders and various functional wing commanders consider the strobe light installation to be a positive safety device. COMNAVAIRPAC, COMNAVAIRLANT, CGFMFLANT, CGFMFPAC, and COMPATWINGSPAC have, within the past year, officially recommended installation of strobe lights. Two squadrons (RVAW-110 and VP-31) have conducted authorized prototype testing on E-2 and P-3 aircraft and have reported enthusiastic reception by air and ground observers.

CNO has tasked CHNAVMAT to take a more active role in developing aircraft lighting criteria. NAVAIRSYSCOM has been requested to study various type commander/NAVSAFECEN proposals and report recommendations for installation and identify costs by fiscal year. As of this writing, the study continues in staff at NAVAIR.

Q: Is there a real need for strobe lights?

A: We think so. For example:

(1) Most midair collisions occur in high-density terminal areas below 10,000 feet at low closure speeds where there is a lot of background light. There is a need for high-intensity, attention-getting lighting for aircraft in this environment.

(2) Also of interest is a recent ALPA (Air Line Pilot Association) study which indicates that 82 percent

of civil midair mishaps from 1964 to 1968 were in the convergence-angle mode of 90 degrees or less (overtaking).

(3) Discounting ACM and/or formation maneuvering mishaps, during the 5 years from FY-68 through FY-72, there were 35 Navy/Marine Corps midair collisions involving loss of 54 aircraft and 139 lives that probably could have been avoided by use of an improved visual detection device.

Q: Well, if there is a need and everyone wants them, why don't we have strobe lights on our planes today?

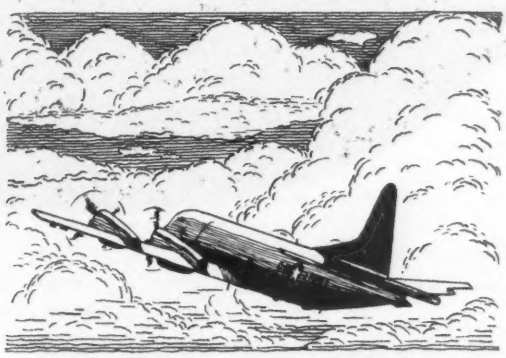
A: $$$$

Q: What is the most cost-effective approach to outfitting our fleet?

A: The considered opinion of COMNAVSAFECEN is that purchase of off-the-shelf red/white piggyback strobe lights (similar to the U. S. Army proposal for subsonic fixed-wing aircraft and all helicopters) could be a significant start. We could possibly cut down on RDT&E costs for our transonic and supersonic aircraft by joint studies with USAF groups. There is also a need to determine installation criteria for both military and civil aviation fleets because, in many cases, it is equally important to the pilot to know where the other guy is going as well as where he is. In other words, the position, intensity, flash rate, and color of strobe lights needs to be standardized for all elements of the aviation community.

Fundamental to patrol aviation safety excellence is the individual squadron safety program. Inherent in these unit programs are the professional quality and worth of the individuals involved. Proper command attention in aviation safety matters dictates that the commander make each individual aware of his particular worth to the team effort. Every team member must have instilled in him the proper perspective and training and must be challenged with his responsibility to contribute to the safe accomplishment of the assigned mission.

THE VP SAFETY PILOT



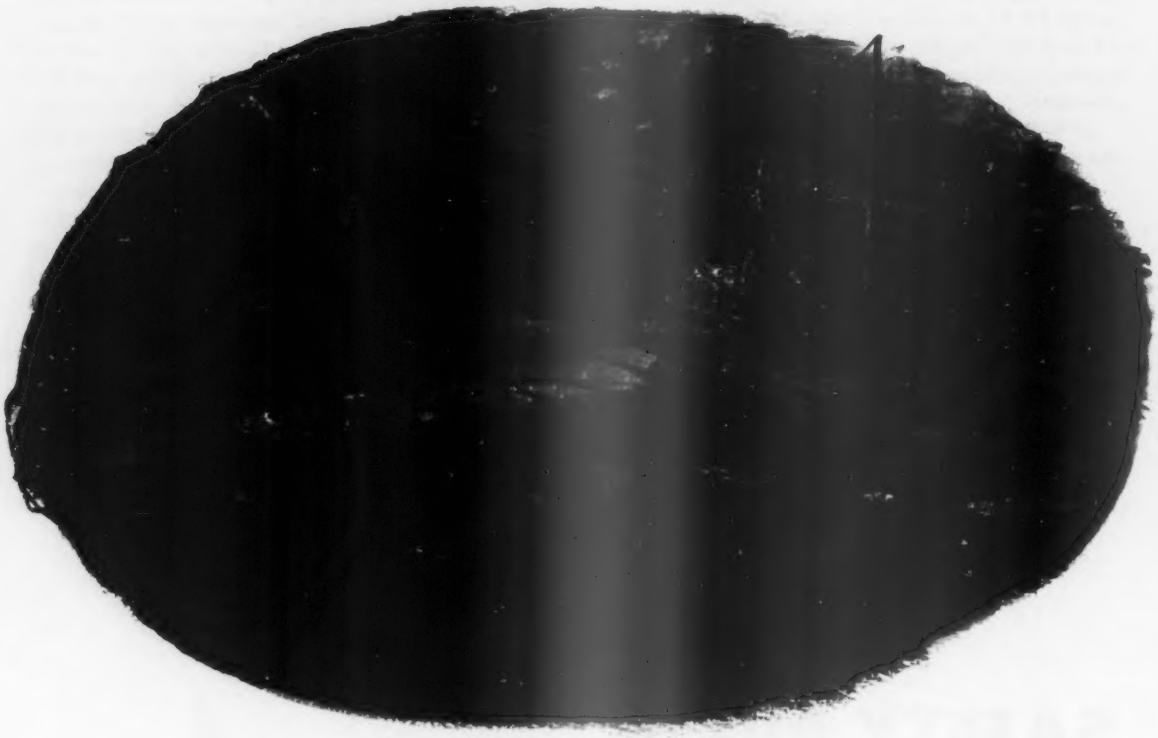
MODERN, multiengine patrol aircraft are designed and built to be operated through team effort rather than by a single individual. The copilot's function is specifically patterned as a safety backup for the pilot throughout the entire flight spectrum, from engine start to shutdown. Traditionally, the copilot has been assigned additional tasks as a means of alleviating the administrative load on pilots during takeoff/landing, airways, and tactical evolutions. The crew copilot is, however, first and foremost, a safety pilot and as such is directly responsible for the maintenance of a consistently alert and cautious backup for the pilot at all times.

Squadron commanding officers should ensure that their patrol plane commanders establish within their individual crews specific cockpit procedures applicable to particular operational or training missions and should require strict adherence by their copilots to such duties during all phases of flight, from chock to chock.

The aviator who occupies the right seat in a patrol aircraft, regardless of rank or billet, is to be considered the crew safety pilot as long as he maintains that position in the cockpit. In this capacity, he will, without deference to rank or title of the pilot occupying the left seat, offer constructively critical comments and recommendations as necessary throughout the mission to maintain the safest possible flight environment at all times. It is absolutely essential to the preservation of aircraft and crew resources that safety pilots thoroughly understand and accept their responsibilities in this area.

COMPATWINGSPAC NOTE

A series of circumstances, judgments, decisions, and errors (procedural and human) eventually culminated in an unintentional, wheels-up barricade engagement. Elimination of any one of the myriad of contributing factors associated with the accident could have prevented the final result.



Bolter, Bolter, Bolter,

AN EKA-3B launched from a CVA on a night tanker mission. After launch, the tanker package was determined to be "sour," and the aircraft climbed to FL 200 to orbit until the launch had been completed.

Switching to approach control, the pilot was requested to manage his fuel to arrive at the ramp with maximum trap weight. Fuel was computed by the crew, and it was determined that of the 3000 lbs of fuel in the auxiliary tank, 2000 lbs would have to be dumped to arrive at the ramp with 5500 lbs of fuel and maximum trap weight.

The approach from overhead the carrier commenced on time, and dumping from the aux tank followed shortly thereafter. The second crewman monitored the dump process and, upon reaching a state of 1000 lbs, secured the dump switch. Continued monitoring of the fuel gage, however, revealed that the tank dump valve had failed to shut off. The dump switch was cycled

several times in an attempt to stop the dumping, but the effort proved futile. Approach control was advised, and a fuel state of 5200 lbs was reported at 13 miles inbound – no sweat.

The pilot was switched to the final controller, and a mode II AWCLS approach was flown to "meatball" acquisition at ¾-mile. At ball call, a fuel state of 4800 lbs was reported. Shortly thereafter, a waveoff for a fouled deck was given by the LSO owing to a crossdeck pendant not being fully retracted.

After initiating the waveoff, the pilot advised CCA of his fuel state, 4200 lbs, and requested "downwind" for his next pass. The CATCC officer, however, upon consulting with squadron representatives, decided that the best course of action was to bingo the aircraft as there was no fuel available for airborne tanking in the event the A-3 could not trap.

The word to bingo was then transmitted along with the bearing and distance to the nearest divert field. The pilot repudiated the signal to bingo and asked for confirmation of his bingo fuel. This was confirmed as 4600 lbs. Upon receipt of this confirmation, the pilot recommended that he be brought aboard since his state was below the published bingo. Again, the signal to bingo was passed, but was immediately rescinded by the CATCC officer.

The *Skywarrior* was then vectored around for another approach which resulted in a hook-skip bolter. Thereafter, the pilot elected to fly a VFR pattern for fuel conservation. *The aircraft boltered on each of the following five passes.* The decision was made to rig the barricade before the bird reached a fuel state that would require crew bailout.

As the barricade was being rigged, the pilot retracted his gear to conserve fuel. Approximately 6 miles downwind, at a fuel state of 2100 lbs, the aircraft was turned in for the final approach. At 6 miles, on final, the pilot reported that he was holding his gear and that he would drop them at 5 miles. This was the first indication to either of the other two crewmembers that the gear had been retracted.

The second crewmember had completed the landing checklist after the last bolter. Upon advice by the pilot that the gear was up, however, he made a mental note to recheck the gear down later in the approach. *This was apparently the last thought given by any crewmember to the position of the landing gear.*

At 5½ miles, AWCLS lock-on was accomplished, and the pilot began concentrating on flying the instruments. At 5 miles, the crew was informed that the barricade was ready. At 1½ miles, the LSO took over for the final phase of the landing – *an unintentional, wheels-up barricade arrestment.*

Investigators determined that there had been a material failure of the hook hold-down cylinder, hence the bolters.

The pilot was cited for his failure to complete the landing checklist. Other personnel contributed to the accident as follows:

Second crewman: Failed to complete the landing checklist.

LSO Spotter: Failed to call wheels-up to the LSO.

Controlling LSO: Failed to ascertain condition of hook, failed to note wheels up, and failed to properly instruct landing gear/hook spotters in their duties.

As indicated at the beginning, many factors contributed to this accident. The elimination of any single one would most probably have prevented the accident.

BARRICADE

WINTER SURVIVAL

CRY your heart out, all you people basking in the South Pacific and southern CONUS sunshine and wherever else it's warm and lovely. In some parts of the world it's snowing. Real, white, quietly falling flakes of snow.

Snow's great for watching through a window from beside the fireplace or for fun and games. But what would you do if you had to abandon your aircraft over snowy terrain, or make an emergency landing in an unpopulated area – maybe even a mountainous area – up north?

The possibility of a winter emergency *does* exist, and our advice to you is: Be Prepared.

What's First?

Your first consideration in winter survival is adequate clothing. If you're wearing a summer flight suit, you'll be next-to-helpless in the mountains this time of year. You might not be too happy wearing thermal underwear under your flight suit in base ops at NAS Southerly, but it'll be well worth your trouble if you go down on some snowy peak a few hours later.

Warm clothing is essential to survival. The same can be said for shelter. At minus 30°F, with a wind of 16 mph, your unprotected face will freeze in 1 minute. If you plan to stay put and wait for rescue, get away from the wind and cold. That means find or make shelter. If you crash land instead of ejecting or bailing out, don't try to live in the downed aircraft. It will dissipate heat too rapidly. Try to improvise a better insulated shelter outdoors.

Food

Food is essential to cold weather survival. Your body energy will be lost rapidly unless compensated for by food intake. Consider stashing some concentrated food in the optional compartments of your SRU-31/P survival kit.

Stay Dry

Staying dry should receive your constant attention. Overexertion and the resulting perspiration can cause moisture to freeze *inside* your clothing. This reduces the effectiveness of insulation.

Keep loose snow off your clothing, particularly when approaching a fire or entering a shelter. If you can't get all the snow off, remove your snow-covered apparel and

stow it away from the heat source. If ice does form on your clothes, you can scrape it off with a knife or beat it out with a stick.

Frostbite

Frostbite is easier to prevent than cure. If you are alone, you must rely on your senses to detect frostbite. The best method of prevention is to be alert for excessive cooling or chilling of your hands and feet or exposed parts of your body. Keep your hands warm, by exercise if necessary. Then use them to check the cooling of other parts of your body.

Travel

To travel or not to travel is a critical decision that will depend upon your circumstances. If in a remote area with arctic conditions, before you decide to move, carefully consider the following requirements for successful travel:

- Exact knowledge of your present location and of the objective of the journey.
- Knowledge of orientation methods.
- Suitable clothing.
- Adequate food, fuel, and shelter, or the equipment for obtaining them.
- Amount of physical stamina required.

Aid to Injured

Along with the normal first aid procedures, it is important to keep an injured man warm and *dry*. Provide some sort of sleeping bag, give him shelter, and build a fire. Warm food and liquids are desirable for conscious patients. Avoid alcohol. Improvise heat packs by heating almost any solid object and wrapping it in fabric. These packets can be used in the same manner as conventional heating pads.

Shock

Remember that it is not always the physically injured who will require help. In the shock of a post-crash ordeal, some individuals seem to throw in the towel. They need help as badly, if not worse, as a man with a broken leg. All crash survivors will suffer some degree of shock.

Can you operate your survival radio? Reading about how to operate them seems to provide a degree of proficiency equal to that derived from reading about how to fly an airplane. Obviously, the best knowledge in both cases is gained through first-person exposure. The survival officer and survival equipment people can help if you're not sure how to work your signal devices under all circumstances.

Signals

Flares, strobe lights, dye markers, and mirrors are wonderful aids. But they can't help unless they are carried and used properly. Snow country signaling offers some unique opportunities for attention getting. If your aircraft is nearby, keep snow off the surfaces or major components to make a sharp contrast with the surroundings.

Tramp signals in the snow and fill them with boughs, sod, moss, or dye powder.

Signal fires are recommended. A platform will usually be required to keep the fire from sinking into the snow. Green logs form an effective platform for a fire. Remember that a standing spruce tree near the timber line will burn readily even when green. "Bird nests" of

inflammable material lodged in the branches will help ignite the tree. (But whatever you do, don't start a forest fire!)

Set a Watch

Sound does not travel well in snow country. If you hole up in a substantial shelter, get out as often as possible to watch for rescue aircraft. If you're not alone, take turns at spotter duty. A windbreak without a roof will help protect the spotter from the weather.

Shelter

Shelter is a major requirement for survival. The aircraft will be too cold for adequate shelter. If there is timber nearby, set your camp up in the vicinity to be close to fuel. If there is no timber, pick a spot sheltered from the wind or drifting snow. Stay clear of the bases of cliffs where snow may collect and collapse on top of you.

In timberless country, make a simple snow cave by burrowing into the side of a drift and lining the hole with grass, boughs, or fabric. Snow caves must be ventilated to prevent carbon monoxide poisoning. If the snow isn't deep enough to support a roof, dig a trench in a drift, and roof it with snow blocks, fabric, or other materials.

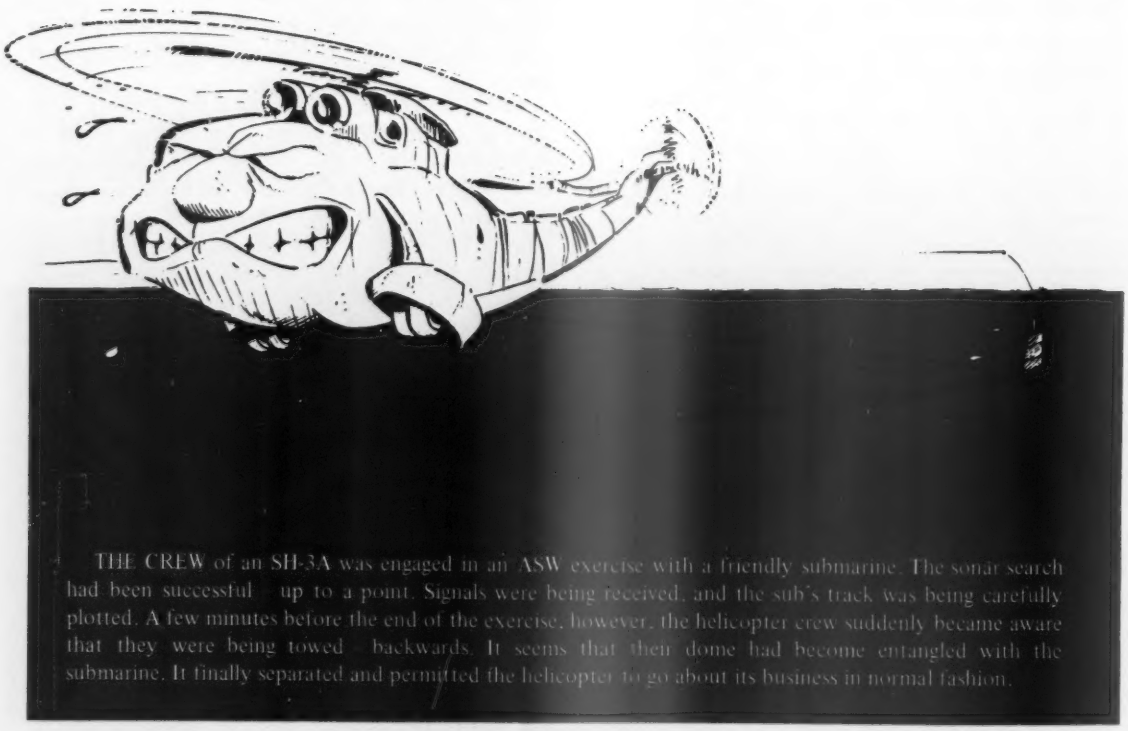
You can construct a paratepee if you can locate poles and have parachute material. A modification of this shelter is a one-man shelter. This is essentially a horizontal tetrahedron with access made through the base opening.

Another shelter that can be used to advantage in timber country is a tree-pit shelter. Enlarge a pit in the snow around a tree trunk. Then cover it with any available covering.

. . . Preparedness . . . a key word in a winter survival situation. If you are adequately prepared physically and mentally, you can even "camp out" on a glacier.

Adapted from AIRSCOOP

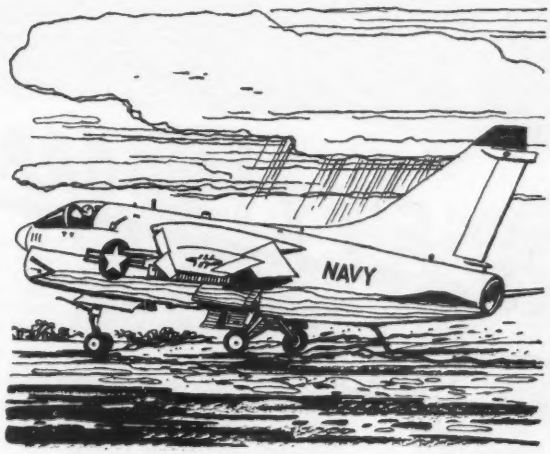
Bullseye Plot!



THE CREW of an SH-3A was engaged in an ASW exercise with a friendly submarine. The sonar search had been successful — up to a point. Signals were being received, and the sub's track was being carefully plotted. A few minutes before the end of the exercise, however, the helicopter crew suddenly became aware that they were being towed — backwards. It seems that their dome had become entangled with the submarine. It finally separated and permitted the helicopter to go about its business in normal fashion.

I'm a Believer

By LT Wm. M. Mulholland, VA-93



FLYING the A-7A/B without a nonskid braking system requires the pilot to know his and the aircraft's capabilities in various situations. So our squadron maintains a thorough training program on short field and wet runway landing techniques. This program has been highly successful in that we had only one blown tire during an 18-month period that included an 11-month deployment.

After returning from this record-setting WestPac cruise, the squadron had to send some aircraft from Lemoore to NARF Jacksonville. Since this was to occur during the squadron standdown, volunteers were solicited.

The flight of two experienced pilots and two FNGs (funny new guys) landed at Midwest AFB for refueling. Two of the birds developed mechanical problems that would cause a day's delay. The other section launched to Jax where the forecast called for rainshowers.

Upon arrival, the weather was as advertised, and the section separated for precision approaches to short field arrestments as briefed beforehand because of the short runway (necessary in wet conditions, per squadron policy).

The section leader directed his wingman to land first. Wing broke out and landed, but hook-skipped the arresting gear. Wisely, the FNG added full power and went around via radar for another try. The flight leader was vectored to final as a result and heard the controller advise his wingman to expect a 5-minute delay to reset the gear after lead landed.

Although fuel was not critical, it was low; so lead elected to skip the gear to get his wingman on deck sooner, especially since the weather seemed to be worsening. This decision was based on experience – he is a combat veteran and had never experienced any problems landing on short runways, although he had never landed on a *wet*, short runway.

Using short field landing techniques, he landed short and slow, aerodynamically braking the large, sleek grey tricycle. The *Corsair* refused to slow below 80 knots, so our hero gingerly applied the brakes, but there was no "feel" because of hydroplaning.

With 3000 feet remaining of the original 8000 available, the hook was dropped and the long field gear caught. The veteran had made a wise decision after initially erring. Somewhat chagrined when the "rookie" arrested successfully, the vet explained to his wingman what had happened, and they both went to the club to relax.

After returning home, the vet said to the squadron ASO, " . . . remember all those lectures on wet runway landings and guidelines on when to elect to arrest? Well, now *I'm a believer!*"

How about you? Are you a recent salt? Have you thought about showing the duty nugget how easy a section takeoff is . . . the super low transition variety? Or do you chide a pilot because he flies too high on a sandblower? How about that time you went to 100 knots (because you are a pro) to get the bite on a nugget during ACM simply because you knew *he couldn't*, or you forgot that he had only 500 hours.

Most FNGs look up to the experienced pilot for leadership and advice. Are you setting the proper example and getting your new pilots off to a good start? Do you know your wingman's weaknesses from the RAG? Do you help him improve by briefing him properly? Do you demonstrate whenever possible the right way?

Safety and professionalism are complementary traits. Use your experience to promote both. ◄

WHAT IS A STANDDOWN

SAFETY PROGRAM
JUL '73

THURSDAY 19 JUL

OFFICERS		ENLISTED	
PILOTS	NFO'S	FLT CREW	NON FLT CREW
0730	QUARTERS -- CO'S REMARKS (H)		
1330	CREW BY CREW EMERGENCY REVIEW CONDUCTED BY CREW/MISSION COMMANDER (H)	SHOP SAFETY PETTY OFFICER PRESENTATION; TDU REVIEW; EQUIPMENT REVIEW; INSPECTION OF TOOLS & EQUIPMENT & WORK AREA (S)	
1400	DRY DITCH OR WET BAIL-OUT DRILLS IN STATIC AIRCRAFT (A)	EMERGENCY EQUIPMENT (H)	
1445	PRESENTATION BY RGEN SPRUANCE (T)	STATE TROOPER/DRIVE SAFE/AUTO CARE	
1530	CHOW		
	NATOPS CHAP V - REVIEW AND QUIZ (T)	REVIEW OF EMERG COMM/NAV/ DESTRUCT (W)	LECTURE BY RGEN. WILLIAM W. SPRUANCE (H)
	INCIDENT REVIEW (T)		DOG AMEROSE -- HANGAR AND HOME FIRST AID (H)
	AIRBORNE FIRST AID (T)		FIRE FIGHT DEMO & FIRE BILL REVIEW (H) (P)
	CRITIQUE (T)		SAFETY MOVIE & CRITIQUE (H)

LOCATOR KEY:

(H) HANGAR DECK
(A) STATIC AIRCRAFT
(S) INDIVIDUAL SHOPS
(T) TRAINING CLASSROOM
(P) RAMP
(W) WARDROOM

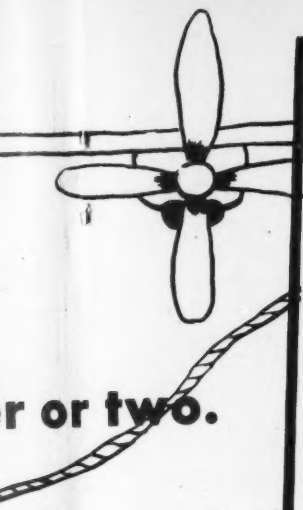
It's a well planned program.

it's a poster

SMOKERS: WEAR EAR

FROM EXPLODING FU

YOUR HEARING



r or two.

R PROTECTION-

FUEL MAY DAMAGE

RING

YN2 MACARTHUR

SUMMER SAFETY STANDDOWN

'Safety Is Life' At VQ-4

Safety was the word at Fleet Air Reconnaissance Squadron Four, (VQ-4), on Thursday, July 19 as a full day was devoted to this most important subject during VQ-4's Summer Safety Standdown.

The Safety Standdown is held twice a year in the squadron. During the day's activities, individual flight crews receive lectures and drills concerning inflight and ground emergency procedures, review NATOPS requirements, and are instructed in emergency first aid. As well as the flight crews, the ground personnel receive lectures on shop safety, safe driving, and hangar and home first aid.

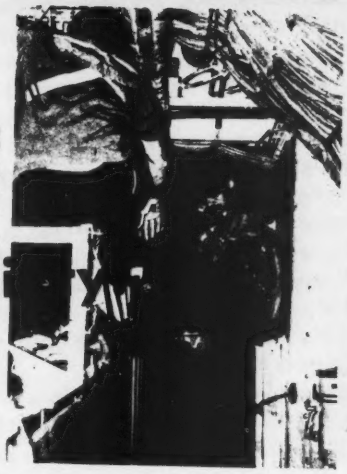
The day's events began at 7 a.m., with opening remarks by VQ-4's Commanding Officer, Commander D. W. Kellerman. The highlight of the program was a safety presentation to all personnel by Brigadier General William W. Spruance, USAF.

General Spruance is the Assistant Adjutant General for Air, Delaware Air National Guard. Since a near fatal jet crash in 1961, resulting in extensive burns, he has given over 500 lectures on Crash Survival and flying safety to over 50,000 pilots and military personnel, plus made four training films, many audio tapes and articles. In over a quarter of a million miles of travel, largely at his own expense, is included three trips to Southeast Asia on the last of which he gave 100 lectures in a two month period to over 10,000 servicemen, including USAF, Army helicopter and Navy carrier pilots. He has innumerable testimonies from those who claim he has saved their lives.

General Spruance's lectures covered automobile safety as well as flight safety. He emphasized w[illegible] hands [illegible] position before a crash reducing the sudden forward motion of the first shock. He also strongly advocated the wearing of flight gloves and keeping flight suit sleeves and pants legs rolled all the way down to reduce burns.

A safety poster contest was conducted in conjunction with the standdown. Winners were presented with 96-hour passes. The winning entries were created by YN3 Morris, YN2 Dale MacArthur and AZ2 Glenn White. The winners will be forwarded to the Naval Safety Center at Norfolk for consideration for possible publication.

Although the VQ-4 Safety Standdown is conducted bi-annually, the safety program is run on a continuous basis throughout the year. Safety inflight and at home are subjects that cannot be emphasized too greatly, and the immediate goal of a safety standdown is to stress to all those concerned that "Safety is Life."



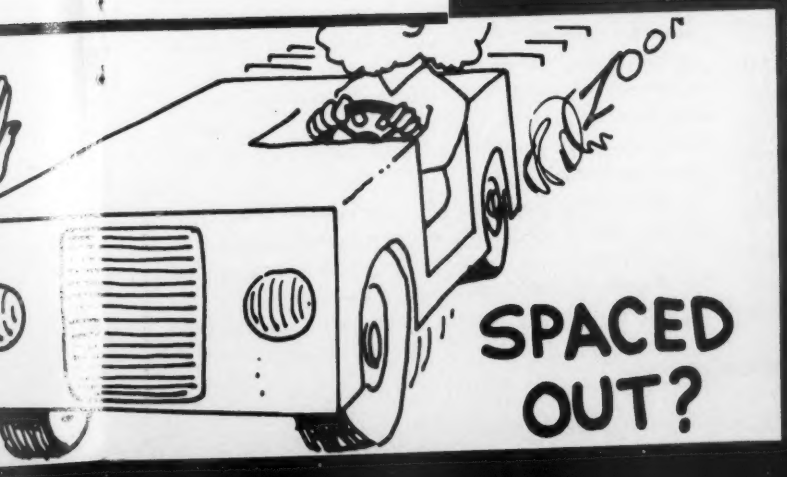
ESCAPE – VQ-4 flight personnel exit through an escape hatch during a practice ditching drill, part squadron's Safety Standdown conducted July 19.

JULY 1973 STANDDOWN CRITIQUE

1. How did you like today's program?
2. Did you learn anything or refresh your mind on anything today?
3. What areas would you like to see covered the next time we have a standdown?
4. Where is the largest hazard in your shop?
5. Where does the biggest accident potential lie in this squadron?

Rank/Rate

RETURN TO SAFETY OFFICE



'Well, if YOU can't

By LCDR L. A. Johnson
Naval Safety Center

A MAN who looks something like John Wayne is crouched in a foxhole with a man who looks like the late Ward Bond. Artillery and small arms fire make a background din punctuated by explosions. Synchronized with the explosions, the two men flinch together, and dirt rains down on them. Through the noise of battle, snatches of conversation are heard . . . "gun emplacement on this hill . . . know your company has had heavy casualties . . . only green replacements available . . . must get the gun . . . know you can do it." So, John Wayne, with a grim look on his face, salutes and moves out. And he takes the hill because that was the way the movie script was written.

Movie heroes can do anything; we are stuck with reality. Reality is more like this:

The CO enters the Air Wing Commander's office, takes the proffered chair and cup of coffee, and sits back appearing to relax. The conversation may include words like " . . . just finished your postdeployment leave period . . . well-rested . . . we have this short notice commitment . . . know you can do the job without any major rearrangement of the op-schedule."

At that point, the skipper may be thinking of his tired old birds, most of them marginally VFR-only. Or he may be thinking about his AT2 that was creamed on a motorcycle while on leave, and the avionics gear that will suffer until another skilled repairman is found.

What also runs through his mind is the phrase, "Well, if you can't hack it, I'm sure there are squadrons and skippers who can." So, he'll accept the commitment, but he is not thinking of Ward Bond or John Wayne. He is most probably thinking of a crew that has seen from 33 to 50 percent turnover since return from deployment; a crew that was operating as a skilled team in the Gulf of Tonkin but has since lost its fine hone.

The CO will tell himself that he CAN DO in spite of the few minor discrepancies. At a meeting with the XO and department heads, he'll impress them with that same CAN DO idea. The eventual result will be that the squadron *will* meet the commitment and, with luck, do it without accident or injury. Unfortunately, luck will be more of a factor than the skipper or his squadron would dare admit.

CAN DO is a principle that has been with the Navy as long as navymen can remember. It can be seen on units' mottoes in some semantic form or another in English or Latin. As the phrase "safety is a state of mind," CAN DO has become so overused and abused that we have lost sight of its original concept and intent.

Let's digress for a moment and consider a small scale example of the principle. An automobile race driver like Richard Petty or Mario Andretti should serve admirably.

In getting ready for a race like Daytona or Indianapolis, their preparation is meticulous and begins weeks before time trials. When race day comes, the driver knows exactly what his car can and will do. He has driven it many times in easy running and in the time trials. The driver has studied the track – he probably will give the track a walkdown just before the race.

The mechanics and driver, working together, have built, run, and rebuilt the engine more times than they want to count. In addition, every fastener on the car has been made up exactly according to the book – proper torque, pressure, elongation, etc.

The pit crew has been trained to a point that they can service the car in less than a minute without a word of conversation – each man knows his particular tasks cold. By race day, the owner or race manager has prepared a race plan based on his evaluation of the track, the other cars, the weather, driver techniques and idiosyncrasies, and any known problems in his own car. The manager and the driver get together on this plan and thrash out every detail. Communications are thoroughly planned.

Only at this point is the car ready to take the track. The race manager, driver, pit crew, and mechanics all know exactly what their duties and responsibilities are, and they know exactly what to expect from others on the team.

Now, and only now, does true CAN DO come into play. CAN DO is the confident, competitive spirit that enables a disciplined trained team to overcome all obstacles and win. *It is the dedication of all to a common goal based on a thorough knowledge of requirements of the task, the methods to meet those requirements, a total understanding of the equipment, unquestionable confidence in the teammembers, and total material readiness.*

Richard Petty approaches a race in the one way that makes him successful – professionally. No amount of CAN DO will make up for a poorly prepared car, a tired or clumsy pit crew, or an inexperienced driver.

We, in the Navy, are the professionals in air and sea

hack it...'

warfare, but we permit ourselves to bridge gaps in true capability with an unjustified hope that we won't have to call on the people or machines that are not up to the task. CAN DO may appear in an airman or seaman who will pretend full knowledge of the tasks and responsibilities of a particular job because of personal pride or pressure from others. A maintenance crew may violate prescribed procedures to meet a demand to "get that sonofabitch in the air some way."

A supervisor may permit his men to take shortcuts or use makeshift tools in maintenance operations to meet a commitment. A division officer or department head may promise his CO that "such-and-such" will be "up and ready" when he does not have the assurance in his own mind that the job can be accomplished.

A naval officer once related a story of one of his experiences in Southeast Asia. A PBR squadron was turned over to the local forces with all boats operating and in top shape. Within 2 weeks, half the boats were down. When asked what actions were being taken to get the boats running, the reply was "we are praying to them. Well, of course, the American allowed as how prayer was a rather unorthodox maintenance practice. The answer was "Well, you Americans do it, but you call it CAN DO."

Now, let's put it all together. A cake requires certain ingredients; leave out any one ingredient and it's a failure. Accordingly, successful safe operations require ingredients – training, material readiness, . proper planning, and time. There is nothing that will adequately substitute for these specific things.

Phoney CAN DO is a hybrid, from a variety that grows in any kind of field:

- A very inexperienced young man who doesn't know or doesn't want to reveal his limitations (I "CAN DO.").
- A first class petty officer who knew how to carry out a complicated repair job as a third class (maybe he did – maybe he didn't) so he rationalizes himself out of closely supervising a third class fresh from "A" school doing a similar job (I know *he* "CAN DO" because *I* could.).
- A senior officer with memories of how he made do on some task in the past, forgetting that it was by the skin of his teeth (I did it, *you* CAN, too.).

We also do other things to shortchange ourselves:

- We'll demand half a dozen men to wax a plane, but we'll overlook having only two men drag a plane out of the hangar.
- We'll accept a makeshift repair to get airborne, but we'll blaspheme everyone from CNO on down when the same gear goes down in the middle of a flight.

Who's to blame? Go look in a mirror.

These fields require plowing before the hybrid gets too infectious. The professional is never afraid to admit that he doesn't know how, because he wants help. A supervisor who doesn't supervise is kidding himself, and he should be made to answer for shoddy work. The book is right as to HOW, but it doesn't account for HOW LONG – only experience tells that.

Now, let's see how the CO made out with the Air Wing Commander.

"Skipper, I've reviewed your problems and recommendations, and to meet this commitment, we're both going to have to work. We'll get you some sort of priority with AIMD and borrow some people for your critical rate deficiencies, but you'll still have to hustle. I want *honest* progress reports. We'll hold a dress rehearsal before I let this commitment go through. I'd rather be late and successful than on time and have an accident."

Adapted from FATHOM


DOAN

YOU are more likely to catch a virus cold if you shake hands with somebody who has one and then rub your eyes or your nose than if you kiss a cold sufferer. At least that's the popular interpretation of a university medical school study published recently.

A team of doctors investigated how rhinovirus, which cause a third or more of the common colds in adults, are spread. They found that you can literally pick up dried cold virus from skin or environmental surfaces, transfer them to the mucosa of your nose or eyes, and give yourself a cold.

The idea that rhinovirus infections are spread primarily by coughing and sneezing may be on the way out. Only 2 out of 25 people with colds in the study expelled detectable virus in a cough or sneeze. The doctors say that this may be explained by the fact that secretions expelled in coughs and sneezes are primarily of oral origin.

But back to your contaminated fingers.

You may not think that your fingers come in contact with your nose or your eyes that often. But chances are they do. The research team "assessed the frequency of exposure of nasal or conjunctival mucosa to contact with the finger under natural conditions." They watched adults who didn't know they were being watched. Some of the subjects were observed in seated medical conferences. Others were in Sunday School. Per hour of observation, one out of every 3 people had finger-to-nose contact, and one out of every 2.7 had finger-to-eye contact.

Just a small dose of virus in the right area is enough to start a cold. And the "right" area is nasal and conjunctival mucosa (inside corner of your eye), but not the pharyngeal mucosa in the back of your throat. A previous study demonstrated that rhinovirus infections were not transmitted by kissing, presumably because the virus came in contact only with oral and pharyngeal mucosa.

So much for the good news.

Now for the bad.

Colds can lead to complications . . . complications can lead to grounding . . . grounding can lead to loss of flight time. And the ideal place to complicate your simple common cold is at altitude.

Start with a stuffed-up head.

Air comes and goes freely into your sinuses through small openings or canals *unless* something blocks them. At altitude, the air in your sinuses expands. If you have a cold and your sinus canals are blocked, air cannot escape when you descend. Result: pressure followed immediately by excruciating, radiating pain.

You know about pressure differentials in aircraft. Your eustachian tubes equalize pressure in your middle ear. When your eustachian tubes are swollen or blocked by mucus, the pressure differential causes pain.

The immediate consequences of a sinus block or an ear block in flight are pretty obvious. The long term consequences are also worth considering.

If your ears or sinuses stay blocked after you're safely back on deck, normal drainage of these congested areas will not take place. This sets up a beautiful culture medium for bacteria. Then you are on your way to a full-blown case of infected sinuses or a middle ear infection known to the medics as aerotitis media. Symptoms are pain, temporary deafness, tinnitus (ringing), ear noises, and even pressure vertigo.

These you can do without.

Flying with a cold has its physical hazards. It can also have chemical hazards. We mean pills, antihistamines, and Grandma Gulch's Home Remedy. (Don't ask for the ingredients.) A pilot or crewman with a cold is likely to try anything to shorten his misery and once again practice his chosen profession with joy.

Antibiotics, of course, will not touch the common cold virus. You're wasting your time, money, and the antibiotics if you think they will.

But let's return a minute to the popular do-it-yourself cold remedies. Most of these contain antihistamine. And you should know what antihistamine does to people who, as they say, "operate heavy machinery." Drowsiness, dizziness, slowed reaction time. All sorts of things you'd like to keep out of a cockpit.

There's still no guaranteed, sure-fire cure for the common cold. If we had one, we'd be rich and famous instead of publishing a magazine.

To date, nobody's come up with anything better than the time-honored advice on how to stay cold-free: drink plenty of liquids and eat wisely . . . get lots of sleep . . . and get plenty of exercise. And take into judicious consideration the medical study we told you about – keep your hands away from your eyes and nose.

If all things fail and you catch a cold, stay in your rack, leaf through your magazines, and enjoy your chicken soup.

But DON'T FLY!

NO MAGIC FORMULA

HAPPY new year! Now is the time to review the past and resolve to make 1974 the safest year yet. There is no magic formula for eliminating accidents, but a few random thoughts, based on factors which have been regular accident producers in the past, will, at least, provide food for thought.

Know your aircraft. A 6 months' analysis of yellow sheets in one squadron showed that in one out of every five sorties, at least one important aircraft system (hydraulics, electric, fuel, oxygen, engine, navigation equipment, radio, brakes) malfunctioned or failed completely. We do not claim that these statistics apply to your squadron, but you don't need a survey to recognize that things can and do go wrong with aircraft systems on a "regular" basis.

Superior maintenance can reduce these failures to a minimum, but is not likely to completely eliminate them. Thus, a thorough knowledge of your aircraft is the best way to keep the percentages in your favor. Often it spells the difference between any incident and an accident. Unfortunately, we lost several aircraft last year because pilots involved did not know their aircraft systems well enough. This was not always due to a lack of application on the part of the pilot. In at least one case, it was due to a lack of information contained in technical manuals. This leads to another thought.

Communicate. NATOPS and other technical manuals are important forms of communication. If you recognize that a manual is incorrect or incomplete in its treatment of an important area, start the ball rolling to rectify the situation. But don't stop there in your efforts to improve communication.

Give some thought to accurate and complete yellow sheet writeups. Read the corrective action writeoffs and ensure you understand the status of each system before taking an aircraft. If you're a maintenance man, ensure that all maintenance actions are properly documented. Numerous mishaps have been caused because someone failed to communicate their actions to others concerned.

If you, as a pilot, have problems while airborne, communicate. It's only good headwork to let someone know. Your flight leader or controlling agency can often provide assistance to minimize the problem and often the best solution.

Communicate your experience. Be an active participant in AOMs and ready room discussions.

Communicate with your crew. More than one aircraft has been lost because crewmembers failed to communicate their actions or intentions to others involved.

If you recognize an unsafe situation, let someone know. This may mean reporting it to the safety officer or merely calling it to the attention of the man involved. The important thing is, *act* when you recognize a problem.

Know your limitations. If you're being called upon to do more and more with less and less, take action to obtain relief before safety is compromised. It may be that the FPP on that A-7 cannot be changed and QA'd in time for the 1530 launch. If that's the case, don't vent the QA; instead, let your supervisors know that more time is needed.

If you're tasked all or otherwise not up to par, let someone in authority know. Any possible embarrassment will be minimal when compared to the possible consequences.

Ensure your proficiency matches the job at hand. That night low visibility recovery may be perfectly reasonable if you're up to speed. On the other hand, if your last actual instrument approach was 3 months ago, discretion may be the better part of valor. The same goes for a takeoff in marginal crosswind conditions.

Play the game according to the rules. This means avoiding the obvious infractions like flattopping, sucking the gear up too soon on takeoff, etc. But, it means more than that. It means using checklists, performing proper preflights, and complying with NATOPS and other SOP. For the maintenance man, it means following the technical manuals. If MIMS calls for a certain torque on a fitting, apply it. There's a reason. Likewise, if the IPB calls for a certain part, use it and no other. Although parts of different specifications may look interchangeable, they may differ radically in performance. A substantial number of mishaps have been caused in recent years by improper parts substitution.

Professionalism is the Key

We could go on enumerating do's and don'ts, but what we're really urging is continuing professionalism at all levels of naval aviation. It will be the key to a safer, more productive year in 1974. ◄

Functional Checkflights

SAFETY is an attitude that must encompass all fields of endeavor. Potentially high-accident risk areas must be identified and proper action taken to eliminate, or at the very least, minimize the hazards involved. Carrier aviation is one of those potentially hazardous environments where the risks involved have been minimized by constantly learning from the errors of the past and applying this knowledge to the solution of day-to-day safety problems. The risks have been minimized, but not eliminated.

The addition of other factors (such as battle damage, airborne emergencies, and even functional checkflights) tend to add risk to the already demanding carrier environment. This additional risk must be recognized and action taken by all personnel involved to prevent an accident.

A recent accident aboard one of our CVAs indicates a need for increased emphasis on the proper performance of functional checkflights. A checkflight cannot be treated as normal flight. The quality of the maintenance product and the safety of aircraft and pilots depend on the completion of each applicable portion of the checklist in a thorough, precise manner. Complacency has no place in aviation, but this is critically true in the performance of checkflights.

The following action is directed:

- Checkpilots must be continually alert to the hazards involved in functional checkflights.
- Ensure completion of all applicable portions of the checklist with no deletions or steps performed out of order.
- When performing checkflights aboard ship, the squadron pri-fly observer must be aware of the flight in progress and ready to assist and advise the air department when difficulties are encountered.

Excerpt from COMLATWING ONE msg

Anymouse

Add WHAT to the fire?

WELL, Mousey ole buddy, there I was calmly gazing out the second floor window of my office across a ramp full of planes – at least 10 P-3Bs and numerous other types. Suddenly, one of the P-3s belched a lot of smoke from the area of the APU. Ground personnel in the area reacted in an outstanding manner. Several maintenance people responded with fire bottles, the crash/fire crew arrived quickly, and the APU was shut down.

Fortunately, the malfunction, whatever it was, turned out to be minor, and there was only minimal damage to the APU. BUT . . . (Are you ready for this???) here's what happened – picture:

- A P-3 on the ramp with other P-3s on both sides and others directly behind.
- Three crash/fire vehicles in proper position, upwind of the smoking aircraft.
- Personnel poised for action, just as they should have been.

Now comes the clincher:

What would be least welcome at an aircraft fire – or even just a suspected fire? A fully loaded fuel truck? You guessed it, Mousey. Here it came, slowly but steadily, the driver taking his own sweet time. As he reached a point abreast of the action, he stopped to see what was cooking. YIKES, a fully loaded refueler within 25 feet of the aircraft fire!

This whole incident took place at NAS Islandbase, and the driver (a civilian) was less than adequately versed in the safety aspects required in operating a fuel truck.

JDSmouse

Loose Gear

IT WAS such a beautiful day for flying that I didn't even mind being scheduled for a duty parts-run instead of a normal attack mission. We carry everything imaginable in our utility US-2A, from potted plants for a change-of-command ceremony to children's clothes for a foreign orphanage. On this flight, our cargo consisted of four BRU-10 bomb racks and two passengers.

After the usual apprehension during loading (will they fit through the door? . . . sure, sure), the launch proceeded as advertised, and we settled down for a cruise to destination. The autopilot was momentarily disengaged for a heading adjustment, and then reengaged. This resulted in a sudden, negative 2G pitchover.

Looking back on it now, I feel that a negative 2G pitchover was the farthest thing from my mind at the time. Recovery was effected reflexively with ease, but I'll never forget the sound of those 100 lb bombracks hitting the cabin overhead and then embedding themselves in the deck. Equally unforgettable was the feeling of guilt I experienced when I looked back into the terror-stricken eyes of my passengers who were staring at the fist-sized holes that the racks had punched in that metal deck. The ghastly injuries that might well have resulted from my failure to ensure that the cargo was secured has given new meaning to the checklist term, LOOSE GEAR.

Shookmouse

Glad you were able to say your piece on just *an Anymouse form.*

and More Fueling Around

BELIEVE it or not, it happened at a military airport. We were ferrying our C-130 from PAR to Homeplate, but found it necessary to divert because we had lost some navaids.

We had been parked on a ramp with a power unit alongside to starboard (presumably to prevent exhaust fumes from entering the forward door of the aircraft) so avionics maintenance could be performed. The power unit ran out of gas, however, and our hosts were notified. Later, one of our crewmen noticed a large puddle around the nose gear and went to investigate.

What he discovered is, even now, hard to believe. There, standing atop the power unit, was a lineman "refueling" it. *He was pouring gas into the tank from a standard-size office wastebasket!* He had carried the gas from a drum in the GSE parking lot across the ramp. When "caught," he was in the process of emptying the second wastebasket of gas into the unit because most of the first one had missed the opening and puddled around the nose gear.

This occurred during a weekend, and the aircraft was the only one being serviced at the time. A short "interview" with the lineman showed that he was totally unaware of even the most basic safety procedures that should be followed when working around aircraft. Further, no supervisor was anywhere near the aircraft or even in the area. One can readily imagine the catastrophic results if the lineman had completed his "refueling" and then attempted to restart the power unit.

Fumingmouse

As dumb as it sounds, IT REALLY DID HAPPEN. A catastrophe in the making! And a terrible commentary on the basic safety indoctrination process of that air station.

Could it happen on **your** *MCAS/NAS? You may find out the hard way if you don't check your basic safety training NOW.*

Circumnavigate

THE FLIGHT was briefed to be a normal, day/night, DR/Nav training flight. We were a 3-plane "trection" of VFR-only helicopters with no onboard navaids or artificial horizons. A VFR stopover flight plan was filed, and VFR conditions (with isolated thunderstorms) were forecast for the route of flight.

We took off from NAS Nowhere just as a thunderstorm was fast approaching. Immediately after takeoff, light rain was encountered, and we could see lightning several miles to the north. The flight proceeded east into gradually increasing rain and turbulence.

Thoughts about turning back began to form in the instructors' minds. Based on forecast weather, however, the flight continued in hopes of circumventing the "local" storm and completing the hop. Visibility continued to decrease down to about 200 yards in heavy rain. The flight then initiated "breakout" procedures and returned to VFR conditions.

After becoming VFR, lead had radio problems and changed lead. The flight, now headed west, proposed to divert to a nearby field since homefield was IFR. This, too, was changed, and the flight attempted to go around the storm to the west. After several minutes of moderate turbulence with lightning and heavy rain, one of the instructors took charge and ordered the flight to proceed to a divert field. All landed in good shape, except for a few jangled nerves.

This episode proves that follow-the-leader and do-the-job-at-all-costs is PPP (pretty poor philosophy). This was a routine training flight that did not justify gambling on safety.

As it turned out, those forecast isolated thundershowers became Thunderstorm Condition 1A. There were high winds, lightning, and heavy rain throughout a 25-mile radius of NAS Nowhere. I wonder what would have happened if the flight had continued to circumvent the storm?

Turbulmouse

Summer "local" storms sometimes do cover a big chunk of real estate. It's hard to find fault, under any combination, with the 180 to the west and back to VFR conditions. But, a VFR-only helicopter in IFR conditions? You're puttin' me on!

Helicopters routinely haul all sorts of external cargo, but extreme caution is still necessary any time there's something hanging below.

Easy on the Externals

THE CH-53A aircraft commander conducted a standard NATOPS brief for an external load training flight. Afterwards, he and his crew manned their helicopter and launched for their practice lifts.

Initially, they practiced lifting a 10,000 pound weight. The HAC made one pickup and his copilot made three.

For a change of scenery and load, they proceeded to a nearby field to practice lifting the fuselage of a helicopter put there for just that purpose. The HAC told the tower he'd be in the area for about 30 minutes.

Control of the helo was then passed to his copilot who executed a normal approach to a hover over the training helicopter. It was hooked up using an aircraft sling/pendant only 10 feet long and attached to the cargo hook of the *Sea Stallion*. The copilot was given an OK-to-lift signal and lifted the load. The crew chief reported it was riding level and looked OK.

The copilot transitioned to forward flight and received another crew chief report that all was well. At this time, the copilot turned downwind (flying 200 feet AGL and 50 KIAS), and the load began to oscillate. On the second or third pitch, the tail of the training copter swung up and zapped the 53's belly twice – near the pylon-fold hinge. The big *Sea Stallion* shuddered violently, and when the oscillations couldn't be stopped, the HAC told the crew chief to release the load.

After the load was released, the helo stopped shuddering and a landing was made. The crew chief conducted an inspection of his aircraft. He reported that nearly everything was OK – there was a broken piece of fiberglass fairing which runs parallel to the ramp.

The HAC lifted into a hover and, when satisfied control was normal, flew back to the starting point to pick up his hookup man. The HAC then made an aerial inspection of the training helicopter they had jettisoned and flew to Homeplate. Another inspection after landing revealed no further damage.

An endorser pointed out that hauling the helo fuselage is not covered in the CH-53A NATOPS Manual, although there is a section devoted to TAR (tactical aircraft recovery). A syllabus covering the training helicopter is being written.

The HAC's brief had not covered oscillation dampening techniques. The NATOPS Manual recommends using a drogue chute when carrying the H-34, H-3, and H-46, but doesn't cover the type helo being used for practice. An airborne sea anchor wasn't used.

The training helicopter was almost as long as the *Sea Stallion*, so the combination of only a 10-foot sling and the oscillation made contact between the two aircraft a certainty. The training helo had been unceremoniously externalled to the practice site using a double-length lifting sling and a drogue chute. No problems had been encountered in climbs, descents, and runs at 60 knots.

The skipper commented that there isn't one rule for flying external loads and that the weight, dimensions, and shape of the object all have a bearing on the action of the object during flight.

NATOPS advises smooth control inputs to preclude oscillation and to gradually build up airspeed to determine riding characteristics and the best speed. The HAC's action of releasing the training load to prevent further damage to his aircraft was proper.

LCOL Rasp

Maj Beauregard

Sgt Pilgrim

There's a Message Here

A Three Act Play
Season: Winter
Place: Sunny Desertonia
Time: Circa 1973

The Players

Pilot	LTCOL Rasp
Copilot (also CO)	MAJ Beauregard
Crew Chief	SGT Pilgrim
Mech	LCPL O'Rourke
Yo Yo 1	CAPT Hairy
Yo Yo 2	CAPT Great
B1-	Briefer One
B2-	Briefer Two
B3-	Briefer Three
SI-	Senior Investigator

THE pilots, crewmen, and troops in this play are real. Resemblance to some you may know is intentional. Any details in the play which might identify them is our booboo.

Act I Scene I

In the briefing room, second deck of an aircraft hangar. The characters, in flight gear, are assembled for a second briefing before a troop lift. Most of the characters are seated in school-type chairs.

There's a subdued noise level as some members are talking and gesticulating with their hands. By looking around, one can see a pilot demonstrating a hairy flare

LCPL O'Rourke

CAPT Hairy

CAPT Great

which would surely zap a tail rotor. Another has his hands positioned in a 45-degree bank. Someone else is simulating a two-plane creep with the left hand slightly forward of the right hand.

The squadron duty officer has his eyes on the door to the passageway – waiting to call the group to attention as soon as the CO enters. He does.

SDO: A-ten-shut.

CO: Carry on. Be seated.

CO: Gentlemen, this operation we're going to perform today will involve lifting 450 troops from here to there. (As he talks, he points to a large map on which two, big Xs appear. One X is the pickup point, the other X is the drop area.) We'll be operating in three sections – and heavy. Don't anyone hit the tail skag on landing. I'll be flying copilot in No. 6. LTCOL Rasp will be HAC.

B1: I have just returned from inspecting the LZs (Landing Zones) we'll be using today. These are the routes we'll use. (He points to the same map the CO used.) Both lift and drop LZs are flat and dry. They will be extremely dusty. Notice the approach and departure routes. We'll approach the lift zone from here, land, load, and depart on this heading. Pay particular attention to these contours to avoid high terrain.

B2: Your weather brief – hot and dusty (chuckle). It's excellent for the entire operation. No clouds, visibility to out-of-sight, winds are light and variable – mostly less than 10 knots.

B3: To make it easy for everyone, from a weight standpoint, we'll each haul 30 troops. We'll use a standard fuel load. On each of your brief sheets, you'll notice the call signs and frequencies. The LZs will be marked with smoke.

CO: That's it! Forty minutes to takeoff.

Curtain

Act I Scene II

On the flight line. Six big CH-53s are lined up abreast. There are people moving in every direction. One can see flight and support crews in, on, and around every aircraft. Five minutes to go. As if by magic, people disappear; and in short order, the unmistakable whine of jet engines is heard in increasing volume as engines are started.

Flight Leader (in No. 6): All aircraft report. (All but one check in.) No. 4, you gotta problem?

No. 3: Looks like No. 4 is down. He's burning but not turning.

Leader: OK. We'll go without him. Tower, scrub Yo Yo 4. The rest of Yo Yo flight is ready to taxi. Yo Yo 3, join the first section.

Tower: Yo Yo flight is cleared to taxi to 36, altimeter 29.96, time 1241, winds calm.

Leader: Yo Yo 1, are you going to move?

Yo Yo 1: Moving! (On ICS) Sounds like Skip is a wee bit antsy. Guess we'd better mind our manners.

Tower: Yo Yo flight. Winds west at 5. Cleared for takeoff. Report when airborne.

Leader: Wilco. Yo Yo 1, what's the delay?

Yo Yo 1: Tower, 1 is airborne at 45.

In rapid order the five aircraft lift, report, and depart.

Leader: All aircraft shift to tactical.

Curtain

Act II Scene I

The lift LZ, a large, dry, flat area where several hundred troops with all their gear await the choppers. Several officers and NCOs with sound-amplified megaphones bark instructions. The din increases as the first group of three helicopters comes into sight.

Yo Yo 1: Sup Unit (Support Unit), this is Yo Yo 1, flight of three, a mile south.

Sup Unit: Yo Yo 1, break into an element of two only. Too much dust here.

Leader: Yo Yo 1, I copy Sup Unit. Yo Yo 3, orbit the LZ until the second section has landed. You will be section three, a single aircraft. Acknowledge.

Yo Yo 3: Wilco. Orbit and become section three.

Precisely as briefed, the aircraft land. As each helo descends through 10 feet, great clouds of dust billow up and out until each aircraft is blotted from view. The troops designated to be carried on the first lift crouch to avoid any whirling rotor blades, quickly enter their assigned helicopter, and wait for takeoff – in a manner that would make the author of any amphibious assault text smile. Then the three sections launch, 2-2-1.

Curtain

Act II Scene II

In the drop LZ. It is only 5 minutes away from the pickup LZ and is similar in appearance.

The first section, Yo Yo 1 and 2, lands and disappears from view in great clouds of dust. The second section approaches on the same heading, and Yo Yo 5, the lead, loses all ground reference prior to touching down. Yo Yo 6, piloted by someone authorized to fly but not attached to the squadron, makes a slow no-hover approach about 100-150 yards to the right of Yo Yo 5. He, too, loses all ground reference during the approach, but his attitude control is not as precise as it should be.

PRANG! He allows the tail rotor to hit the ground. The aircraft bounces into the air, spins around more than a 360, finally coming to rest upright.

The curtain falls after an unknown voice is heard to utter a rather common expletive.

Act III Scene I

Inside and then outside of Yo Yo 6.

Voice: Hey! Some guys were thrown outta the plane!

Voice: Whatinhell happened?

Voice: Get out! Get out!

Crew Chief: Take it easy you guys! Wait 'til the rotors stop. We're OK.

Voice: This thing's gonna explode!

Voice: How many times did we hit?

Voice: Hey, leggo my leg! I can't move!

Voice: Gas! There's a gas leak!

Voice: Aw, shaddup! It's only hydraulic fluid.

Crew Chief: OK you guys, out! Rotors are stopped.

Voice: Leave your packs in the aircraft. Everybody out.

Curtain

Act III Scene II

Same drop LZ. All occupants of the damaged aircraft are out of the helicopter. Many support personnel have arrived on the scene; there are lots of vehicles, many shouted orders, and two of the more seriously injured troops are being loaded aboard a *Huey* to be flown to a hospital for checkup. Investigators are already taking notes as they interview various flight crewmembers and troops. The SI (Senior Investigator) is talking to the pilots. Simultaneously, other investigators are talking to the crew chief, mech, and troops.

SI: How'd it happen?

Pilot: I was making a normal no-hover approach. During the latter stages, the attitude warning horn blew, so I lowered the nose. I shifted my scan from the gages to the ground on the right just as the horn blew again. Then we hit. *(The pilot was flying for only the second time in over two months.)*

Copilot: I hollered "tail rotor!" and pushed the cyclic forward with my thumb. The approach up to the end was excellent. After I said tail rotor on ICS, I looked left at the ground then back at the gages just as we hit. The HAC shut everything down.

SI: Sgt, what do you remember?

Crew Chief: When we got close to the ground, the dust started rolling up to us. I pulled my head in out of the dust and looked back toward the tail to see if my first mech was beside the ramp selector switch. The top of the ramp appeared to be right off the ground. I keyed my mike to tell the pilot when I heard the CO say, "the tail." While we were spinning around, I saw some troops in the middle thrown out of the helicopter. When we stopped moving, the pilot cut the engines, hit the rotor brake, and I let the troops off.

SI: Did you brief any of the troops about strapping in or what emergency exits to use?

Crew Chief: I don't think so.

SI: Did anyone go out any of the emergency windows or doors?

Crew Chief: No, they came right for the personnel door because the ramp was closed.

SI (to the Mech): What did you see or do?

Mech: I felt the plane spin. I slid across the ramp, hit something, and blacked out for a second or two. I was thrown out.

SI: How far from the plane were you?

Mech: About 100 feet from its final resting place.

SI: How many times did the helicopter hit the ground?

Mech: I think three.

SI: You weren't strapped in?

Mech: No.

SI: Did you brief any of the troops?

Mech: No, I just told them to sit down and stay put 'til we were on the deck.

SI: Men, in putting the facts together to see what caused this accident, I want you to tell me only what you *know*. Don't guess what someone else was doing. Just tell me what you saw, heard, or did.

Voice: The ground seemed to come up real fast. When we bounced, men were falling all over. I grabbed the guy next to me to hold on. No one panicked.

Voice: Five or six of us got thrown out, but no one was hurt very badly. We all got up and dusted ourselves off. A couple of guys were bleeding, but the medics took care of them.

Voice: I crawled out the --- end.

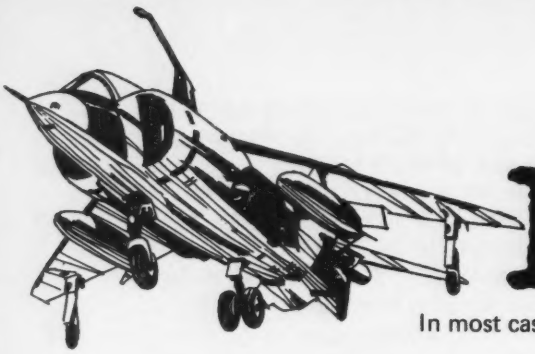
SI: Thanks men. One thing more. As soon as we get out of here, I'll want a brief, signed statement from each of you. Be sure to identify yourself, where you were sitting, and what happened to you. Any questions?

Voice: Yeah. What do we do now?

SI: Get your packs. Find your NCO and tell him you have to write a statement for the mishap board.

Voice: Would the Colonel know where we can get a beer?

Curtain ◄



Letters

In most cases, all that an argument proves is that two people are present.

Ace L.

Another Communications Gap

Fleet Post Office – Reading the article entitled "Communications Gap" in the June 1973 issue, I made a mental note to brief our aircrews on the dangers described therein at our next AOM. Alas, too late. Like many nights in the operating area, the weather was clear, 4 miles visibility in haze, with a half-moon. An incident evolved that very night through a series of small oversights that culminated in a near-miss of multiple aircraft operating from our carrier.

As "Marshal" was vectoring the first few aircraft for the final night recovery, Tower launched the SH-3 for plane guard and cleared it for sonar checks to starboard.

After the aircraft had commenced their approaches, the carrier made a hard starboard turn to Fox Corpen. As she steadied into the wind, the first aircraft to call the ball was a *Phantom.* CATCC was issuing very little information for a Mode III approach, and the LSO's comments were "low, flat all the way, over the top, bolter."

As the F-4 left the angle, the pilot saw a helo hovering directly ahead, co-altitude. Maintaining optimum AOA and turning sharply right, the jet was able to avoid the SH-3. (The F-4 pilot judged this miss distance to be approximately one rotor's diameter. The helo pilot stated that he could "see the fasteners on the F-4's engine bay doors.")

Because the helo crew was involved with its check and the tower's attention was given to readying the deck, no one had observed that the ship's hard right turn had put her inside the helo's position.

The helo was told of his precarious position and was cleared to cross the fantail from port to starboard. Sure enough, the next F-4 received this frantic response to his ball call: "Wave off! Helo in the groove!" A second near-miss of equally frightening separation had occurred.

Fighter Squadron ASO

• Talk about a communications gap – this is a classic! Would you happen to know if there was anyone in Primary other than the compartment cleaner?

APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request.

Address: APPROACH Editor, Naval Safety Center, NAS Norfolk, Va. 23511. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

Every Man a Safety Officer

APO, Seattle – The July '73 issue of APPROACH inside back cover set forth the concept of "Every Man A Safety Officer." I'm the ASO for an assault helicopter company in Alaska, and I concur wholeheartedly with LCDR L'Herault's article.

The philosophies of the Army are the same as the Navy when it comes to making everyone safety-conscious. The ASO has the job of educating the officers of his unit and making them aware of their responsibilities to the safety program. This safety awareness is the heart of a safety-conscious unit – whether a carrier-based combat squadron or an assault helicopter company.

The safety awareness program in the 120th Aviation Company is carried out to its fullest extent. Individual responsibilities to the safety program are discussed at the monthly aviation safety meetings. As a constant reminder that every man is a safety officer, each officer and NCO wears a Safety Officer button on his cap. This button is worn with the attitude that each officer and NCO is a safety officer both on the job and at home.

The Army and Navy go hand-in-hand with the concept of "Every Man A Safety Officer."

CW3 Walter E. Jones
ASO, 120th Aviation Company (H)

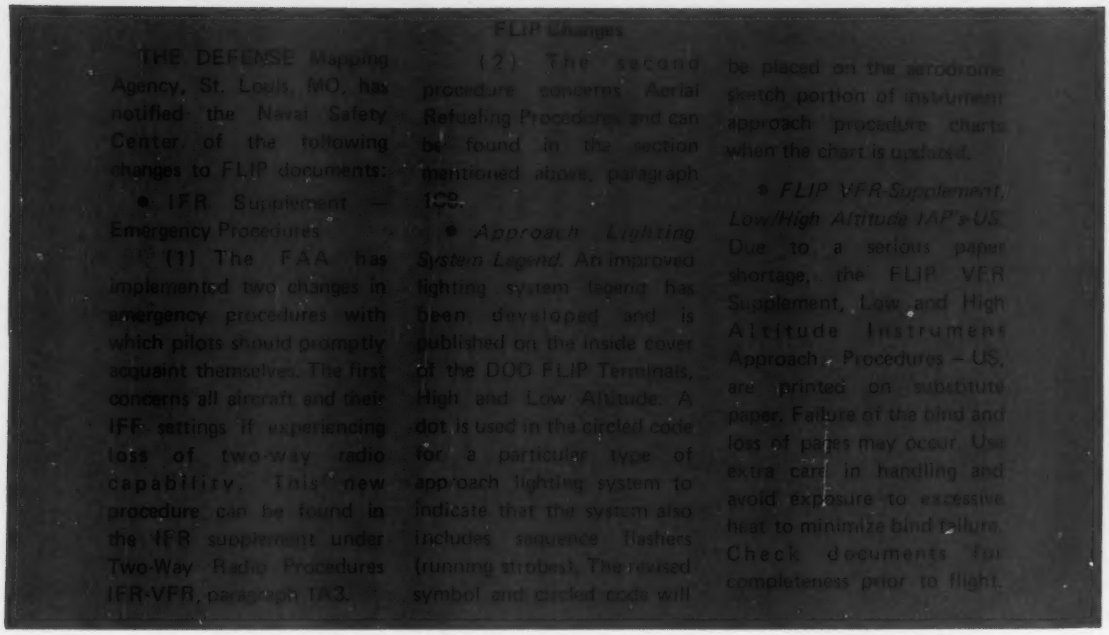
Watch That First Step

FPO, New York – During several cruises aboard a baby birdfarm, our squadron has loaned SAR crewmen to another outfit whose duties include plane guard. (The borrower squadron was short of qualified crewmen.)

Midway through a recent exercise, I was selected to fill the billet with the other squadron's crew and aircraft. We fly the crew concept in our outfit, so I was a bit hesitant as far as crew coordination was concerned. There was a lull in our plane guard duties, and we had a chance to conduct bounce drill. After an hour of touch-and-gos, I heard the word "final" from someone – I don't know who.

The other crewman suggested I insert the main landing gear locking pins while he unrigged the hoist. I thought everyone in the helicopter was of the understanding that this was to be a final landing. After touchdown, the other crewman and I unstrapped. He went aft while I disconnected my ICS and started forward. I opened both halves of the personnel door and turned to pick up the pins. I started out the door, and as I did, I saw nothing but water. We had lifted for another bounce. I quickly pulled myself back in and told the pilot that the door was open and asked him to slow to a hover while I secured it.

Since that time, before I unstrap or disconnect my ICS, I notify the pilot.



FLIP Changes

THE DEFENSE Mapping Agency, St. Louis, MO, has notified the Naval Safety Center of the following changes to FLIP documents:

• IFR Supplement — Emergency Procedures

(1) The FAA has implemented two changes in emergency procedures with which pilots should promptly acquaint themselves. The first concerns all aircraft and their IFF settings if experiencing loss of two-way radio capability. This new procedure can be found in the IFR supplement under Two-Way Radio Procedures IFR-VFR, paragraph TA3.

(2) The second procedure concerns Aerial Refueling Procedures and can be found in the section mentioned above, paragraph 10e.

• *Approach Lighting System Legend.* An improved lighting system legend has been developed and is published on the inside cover of the DOD FLIP Terminals, High and Low Altitude. A dot is used in the circled code for a particular type of approach lighting system to indicate that the system also includes sequence flashers (running strobes). The revised symbol and circled code will be placed on the aerodrome sketch portion of instrument approach procedure charts when the chart is updated.

• *FLIP VFR Supplement, Low/High Altitude IAP's-US.* Due to a serious paper shortage, the FLIP VFR Supplement, Low and High Altitude Instrument Approach Procedures – US, are printed on substitute paper. Failure of the bind and loss of pages may occur. Use extra care in handling and avoid exposure to excessive heat to minimize bind failure. Check documents for completeness prior to flight.

One doesn't realize how vital this simple action can be until he's been through such a hairy experience. I definitely learned a lesson and hope other crewmen will think twice and avoid making this mistake.

Name Withheld
AW3 Crewmouse

Practice Makes . . .

NAS Patuxent – I recently had an interesting and potentially fatal experience with Airport GCA. We were in a P-3 shooting a straight-in, precision approach to runway 04. Flight conditions were VFR. We were on an assigned heading of 030 and well left of centerline when we were handed off to the final controller.

The final controller promptly turned us right and gave us the info "approaching glide path, begin standard rate of descent." Initially, everything seemed normal. However, things turned to worms in a hurry. The controller kept saying we were above glide slope even though we were descending in excess of 1000 fpm. At 4 miles from touchdown and 400 feet, I told my student to level off.

Looking overhead, I saw an E-2 well above us apparently making a VFR entry into the pattern. I tried to raise the controller and tell him he was tracking the *Hummer* and not us. Finally, after repeated calls, he answered, and when advised of the situation, he replied, "I have you now."

The final controller's failure to positively identify us before giving instructions warrants a review of GCA procedures. In IFR conditions, this sort of incident could end tragically. I also think it points up the tendency of some controllers to ease up during VFR conditions. My point is that if the controllers aren't practicing while it's VFR, how do they expect to be on the money when it's IFR?

LT J. Love, USN
VP-30

• Simulation is insidious. There is a point during simulation where you must decide what will be "lifelike" and what will be drill. GCA controllers are trained to pay little attention to the actual conditions. They handle aircraft as if it were for real at all times.

In your case, however, there definitely was a mixup somewhere, possibly during the handoff from approach control to the final controller.

Vol. 19 **approach** No. 7

RADM W. S. Nelson
Commander, Naval Safety Center
Publisher

Our product is safety, our process is education and our profit is measured in the preservation of lives and equipment and increased mission readiness.

Contents

Departments

NavAir 00-75-510

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Credits

The AV-8A *Harrier* demonstrates its versatility of operation in close quarters. Courtesy Hawker-Siddeley Aviation, Ltd. **Pg 1** Photo (top): VA-113, **Pg 6** Photo: Grimes Manufacturing Co., Urbana, OH, **Pg 16** Photos, Art: VQ-4, **Pg 19** Photo: Universal Studios, **Pg 20** Photos(center) LCDR Ronald Maratea.


Have you ever met
a bird face to face?